

Notice of Allowability

Application No.

09/748,799

Applicant(s)

ZHANG ET AL.

Examiner

Kelly L. Jerabek

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to Amendment Filed 2/22/2005.
2. ☒ The allowed claim(s) is/are 4,5,8,9,14,16,17 and 22-25 (Renumbered as 1-11 respectively).
3. ☒ The drawings filed on 22 February 2005 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Allowable Subject Matter

Claims 4-5, 8-9, 14, 16-17, and 22-25 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

Re claims 4-5, the prior art fails to teach or suggest, " An image sensor apparatus comprising... wherein one of said first pair of nodes is a low impedance node".

Re claims 8-9, the prior art fails to teach or suggest, " An image sensor apparatus comprising... wherein one of said second pair of nodes is a low impedance node".

Re claim 14, the prior art fails to teach or suggest, " An image sensor apparatus comprising... wherein one of said nodes is a low impedance node that serves as an output of said readout circuit".

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Re claim 17, the prior art fails to teach or suggest, " An image sensor apparatus comprising... wherein one of said nodes is a reference voltage node and another of said nodes is a low impedance node".

Re claims 22-23, the prior art fails to teach or suggest, " A method of controlling an image sensor apparatus comprising... wherein one of said switching steps includes switching said capacitor into connection between a low impedance node and a further node".

Re claim 16, the prior art fails to teach or suggest " An image sensor apparatus comprising... wherein said buffer output is one of said nodes of said first pair and said buffer input is one of said nodes of said second pair".

Re claims 24-25, the prior art fails to teach or suggest "A method of controlling an image sensor apparatus including... switching a capacitor into a first configuration having connection between the second supply voltage and the output of the buffer; and then switching the capacitor into a second configuration having connection between the output of a pixel circuit and the input of the buffer, such that the capacitor, when the capacitor is in the first configuration a compensating voltage is stored therein including components incidental to the readout of the pixel voltage, and when the capacitor is in the second configuration the incidental voltage components are cancelled".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al. (US 6,618,083) discloses mismatch-independent reset sensing for CMOS area array sensors. The information regarding reducing fixed pattern noise is relevant material.

Merrill et al. (US 6,002,432) discloses a method for operating an active pixel sensor cell that reduces noise in the photo information extracted from the cell. The information regarding reducing fixed pattern noise is relevant material.

Sauer et al. (US 5,969,758) discloses DC offset and gain correction for a CMOS image sensor. The information regarding reducing fixed pattern noise is relevant material.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571)**


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272-7312. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on **(571) 272-7308**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ


TUAN HO
PRIMARY EXAMINER